3.3.4 Summary

The Ecology Program at the RFS conducts monitoring of the ecological resources to ensure regulatory compliance and to preserve, protect, and manage those resources. Proactive management of the natural resources is critical to the long-term sustainability of the ecosystems at the Site. Noxious weeds continue to be a top priority as does the revegetation of the COU. Data from 2007 documented the continuing establishment of vegetation at revegetation locations. Noxious weed control activities and additional revegetation activities were conducted during 2007 to improve and enhance the vegetation at the Site. The monitoring results continue to provide useful information to assist in management activities. Full, detailed reports and analyses for each field monitoring effort are presented as stand-alone reports on the accompanying Ecology DVD.

3.4 RFLMA Ecological Sampling

The Ecological Risk Assessment determined that residual contamination does not represent a significant risk of adverse ecological effects. The CAD/ROD, however, requires that specific additional sampling be conducted to reduce the uncertainties determined in the Ecological Risk Assessment. RFLMA Attachment 2, Table 5, Ecological Sampling, specifies a minimum of three quarterly water samples at Ponds A-4, B-5, and C-2 for radium-228, cyanide, and ammonia. Ecological sampling and data evaluation protocols are summarized in Table 3-118. These locations are shown on Figure 3-1.

Table 3-118. Sampling and Data Evaluation Protocols for RFLMA Ecological Sampling

Location	Location Description	Sample Types/ Frequencies	Analytes	Data Evaluation
Pond A-4	Pond A-4 at east end of pond near outlet works (water); at deepest location in pond (sediment)	Quarterly grabs (water); One-time (sediment)	Ammonia, cyanide, Ra-228	Consultation with regulators
Pond B-5	Pond B-5 at east end of pond near outlet works (water); at deepest location in pond (sediment)	Quarterly grabs (water); One-time (sediment)	Ammonia, cyanide, Ra-228	Consultation with regulators
Pond C-2	Pond C-2 at east end of pond near outlet works (water); at deepest location in pond (sediment)	Quarterly grabs (water); One-time (sediment)	Ammonia, cyanide, Ra-228	Consultation with regulators

The first quarterly water sampling at Pond C-2 was performed on February 12, 2007. Ponds A-4 and B-5 were sampled for radium-228 and ammonia on February 12, 2007, and for cyanide on March 19, 2007. The second quarterly water sampling was performed at Ponds A-4, B-5, and C-2 on May 4, 2007. The third quarterly water sampling was performed at Ponds A-4, B-5, and C-2 on September 12, 2007. Sediment sampling was performed at Ponds A-4, B-5, and C-2 on July 13, 2007.

3.4.1 Data Evaluation

The minimum required sampling was completed in third quarter CY 2007. Refer to the analytical data accompanying this document for the completed sampling and analysis information. Validated analytical results for the samples collected in third quarter CY 2007 were available in fourth quarter CY 2007, and the evaluation is not complete for inclusion in this quarterly report. The data are being evaluated and DOE will consult with CDPHE regarding the relevance of the data to the ecological risks and the uncertainty identified in the CAD/ROD, as required by RFLMA. The results of the evaluation and consultation will be documented in a report and a RFLMA contact record. The report will be included in the quarterly or annual report for the period during which the consultation is completed.

3.5 Data Management

3.5.1 Water Data

Data from samples submitted to an analytical laboratory are received as both hard copy and as an electronic data deliverable. The electronic data are loaded into an Oracle®-based relational database. The environmental monitoring data are accessible using the SEEPro application. The hard-copy analytical reports are archived in the records library in Grand Junction, Colorado, along with the original field data forms and other relevant hard-copy forms or documents containing project data. Well construction and lithology logs are maintained for previously drilled wells and are produced for all new wells drilled. These logs are archived in the records library and can also be accessed electronically via the SEEPro database and the Geospatial Environmental Mapping System.

SEEPro uses Oracle® software for data management and Microsoft Access® for data retrieval and display. It compiles water quality, air quality, field parameter, sample tracking, sample location, and water level data for groundwater, surface water, boreholes, soils, and sediment samples. Field parameter data include such information as sample location, sample date, pH, turbidity, conductivity, and temperature. Chemical information (Chemical Abstracts Service registry numbers, analytical results, and detection limits) is also included. Specific procedures for verification of database information received from subcontractors, or input directly into SEEPro, are followed. These procedures provide quality assurance (QA) documentation, which ensures that available data have been incorporated and entered or uploaded properly into SEEPro. Data integrity is maintained with standardized error checking routines used when loading data into SEEPro. Other procedures address database system security and software change control.

The RFS field data are entered through the FieldPar field data entry system. This system is a data entry module that is compatible with the SEEPro database, and is used in the office by field personnel. Data entered into FieldPar are verified by the sampler before loading into the main SEEPro database.

Spatial information for air and water data features is located in the LM GIS database. Some of the data features included are monitoring locations, potentiometric surfaces, plume configurations, streams/creeks, lakes/ponds, topographic contours, and historic RFS facilities. This system uses an ESRI® ArcGIS™ suite of software to store and present data. Automated